F Area, A-Line Facility Clean-Up

In the Uranium Oxide Conversion Facility (FA-Line) the potential existed for workers to come into physical contact with recycle uranium. In this facility, liquid uranyl nitrate solution from F-Canyon was concentrated and thermally de-nitrated to an oxide powder (UO_3). Facility clean-up involved removing UO3 dust from floors and equipment each shift. Personnel performing this activity, usually four to five people for one hour per shift, up to three shifts per day, were required to wear respiratory equipment and other protective clothing. If workers failed to wear the proper personal protective equipment then there would have been an increased risk of exposure to transuranic and fission products in the recycle uranium.

Removal of UO3 from Denitrator

In the A-Line Facility, liquid uranyl nitrate solution from F-Canyon was concentrated and thermally de-nitrated to an oxide powder (UO_3). This powder was vacuumed (gulped) from the denitrator pots by hand, collected on filters, then transferred to a drum loading facility for storage in 55-gallon drums. The nature of the oxide conversion operations, necessitated that workers handle uranium oxide dust, and work in areas where uranium oxide dust was present. This activity consumed the major portion of an eight-hour shift for four to five personnel, up to three shifts per day. Administrative controls required personnel performing this activity to wear respirators and other protective clothing. If workers failed to wear the proper personal protective equipment then there would have been an increased risk of exposure to transuranic and fission products in the recycle uranium.

5.6 Environmental contamination from Plutonium, Neptunium, and Technetium in Recycled Uranium

See Section 2.5 of this report.

6.0 Conclusion

6.1 Conclusions

No evidence was uncovered during the course of this study, which would indicate SRS recycled uranium operations presented a challenge to radiological protection measures historically used at the site. These protection measures notwithstanding, records indicate that 99 workers received internal doses of uranium over the history of the plant, which are well documented in site incident reports and personnel dosimetry files. It is likely that the workers receiving internal uptakes of uranium were also exposed to transuranics present in the uranium at very low levels as discussed in Section 3 of this report. Results of the study indicate that SRS took reasonable care in the conduct of recycle uranium operations to safeguard the health and safety of site workers, and the public, as well as, protecting the environment.

Data supporting this study were gathered from numerous site reports, shipping/receiving records, discussions with site current and former employees, and discussions with receiving/shipping site employees from around the DOE Complex. Data sources are believed to be as accurate as measurement techniques permitted at the time measurements

were made, and as reliable as aging memories will permit. In many cases memories were corroborated by written reports of the period.

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